

IN THE CLAIMS

This listing of claims will replace all prior versions, and listings, of claims in the application:

Claim 1 (Currently Amended): A method of measuring dimensions and alignment error of thin film magnetic heads formed on a row bar cut-off from a substrate, comprising the steps of:

illuminating a magnetoresistance effect element and a resistance detector element which is formed for monitoring a lapping process, both of which are formed on the ~~substrate~~row bar, with illuminating light whose wavelength is 300 nm or less;

forming an image by imaging light reflected from said elements;

converting said image to an image signal through photoelectric conversion;

and

detecting dimensions ~~and alignment error~~ of the magnetoresistance effect element and the resistance detector element formed on the ~~substrate~~row bar by processing said image signal, and calculating alignment error between the magnetoresistance effect element and the resistance detector element from said image signal~~detected dimensions~~.

Claim 2 (Previously Presented): A method according to claim 1, wherein the illuminating light includes a wavelength component of 248 nm.

Claim 3 (Previously Presented): A method according to claim 1, wherein the illuminating light includes a wavelength component of 266 nm.

Claim 4 (Previously Presented): A method according to claim 1,
wherein the illuminating light includes a wavelength component of 213 nm.

Claim 5 (Cancel)

Claim 6 (Previously Presented): A method according to claim 1,
wherein the magnetoresistance effect element and the resistance detector element
are covered with end face protection films.

Claims 7-10 (Withdrawn)

Claim 11 (Currently Amended): An apparatus for measuring
dimensions and alignment error of thin film magnetic heads formed on a row bar cut-
off from a substrate, comprising:

a light source for emitting light whose wavelength is 300 nm or less;

illuminating means for illuminating a magnetoresistance effect element and a
resistance detector element which is formed for monitoring a lapping process, both
of which are formed on ~~a substrate~~ the row bar, with illuminating light emitted from
said light source;

imaging means for obtaining an optical image of ~~said substrate~~ the row bar,
illuminated by said illuminating means;

image pick up means for converting ~~[[an]]~~said optical image of ~~said~~
~~substrate~~the row bar, which is imaged by said imaging means, to an image signal
through ~~photoconversion~~photoelectric conversion; and

~~detecting means for detecting dimensions and alignment error of said~~
~~magnetoresistance effect element and said resistance detector element formed on~~
~~the substrate~~row bar by processing said image signal obtained by said image pick
up means, and for calculating alignment error between said magnetoresistance
effect element and said resistance detector element from said image signal that is
~~obtained by said image pick up means~~detected dimensions.

Claim 12 (Previously Presented): An apparatus according to claim 11,
wherein said light source emits light having a wavelength of 248 nm.

Claim 13 (Previously Presented): An apparatus according to claim 11,
wherein said light source emits light having a wavelength of 266 nm.

Claim 14 (Previously Presented): An apparatus according to claim 11,
wherein said light source emits light having a wavelength of 213 nm.

Claims 15-16 (Cancel)

Claims 17-19 (Withdrawn)

Claim 20 (Previously Presented): A method according to claim 1,
wherein the illuminating light has a wavelength of 200 nm.

Claim 21 (Currently Amended): A method according to claim 1,
further comprising a step of displaying the measured results at least one of the
variations in dimensions of the elements or distribution of alignment error on a
display.

Claim 22 (Currently Amended) An apparatus according to claim 11,
further comprising a display for displaying the measured results at least one of the
variations in dimensions of the elements or distribution of alignment error.